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A4L LAAL L109

(56) Documents Cited

GB 2239639 A EP 0230280 A1 WO 00/07847 A1
US 5842715 A US 5713633 A

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INT CL⁷ A47C 7/38 7/62 7/72, B60N 2/48 3/00, B60R
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(54) Abstract Title

Screen mounted on a headrest

(57) The flat screen is detachably mounted on to a resiliently deformable sheet of plastic foam 10. Straps 14 pass through apertures in the sheet 16 and around the head restraint H.

Alternatively the sheet 16 forms a cover for the head rest H. The flat screen is attached to the sheet 10 by studs 15 or a T-section rib. The mount is used as part of an in-car video entertainment system.

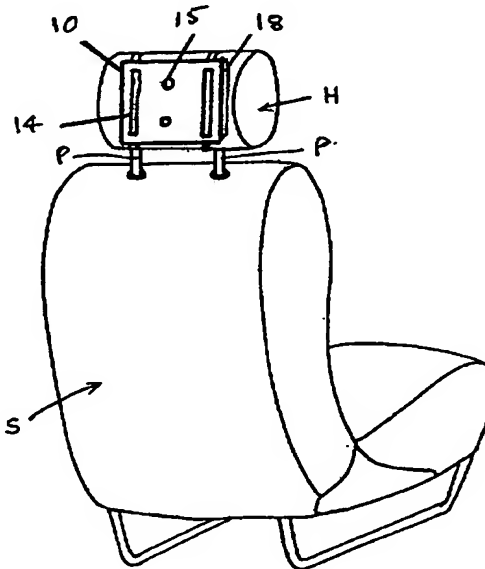


FIGURE 1

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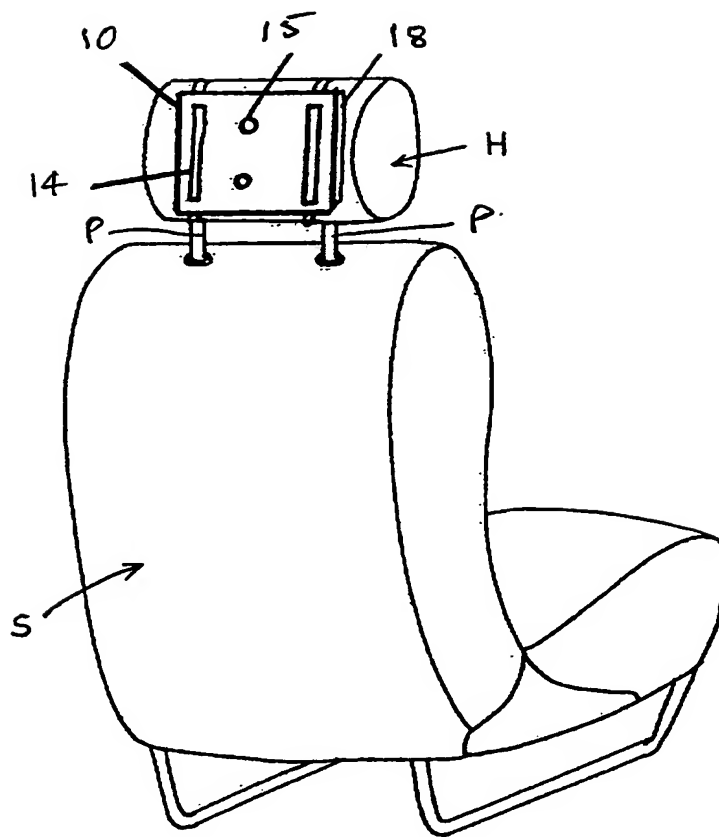


FIGURE 1

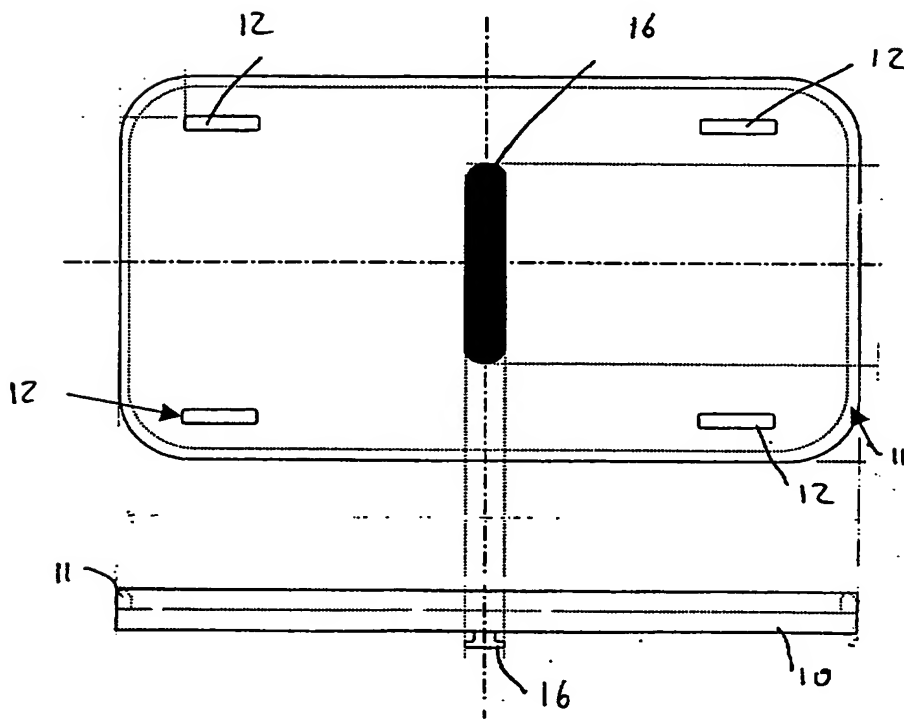


FIGURE 2

FIGURE 3

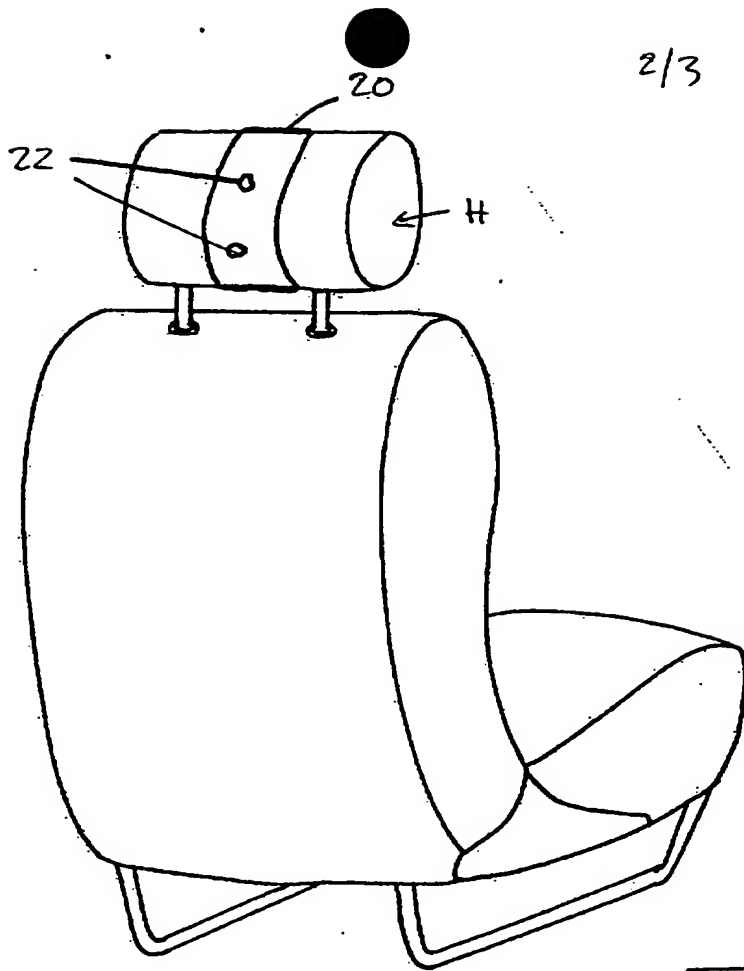


FIGURE 4

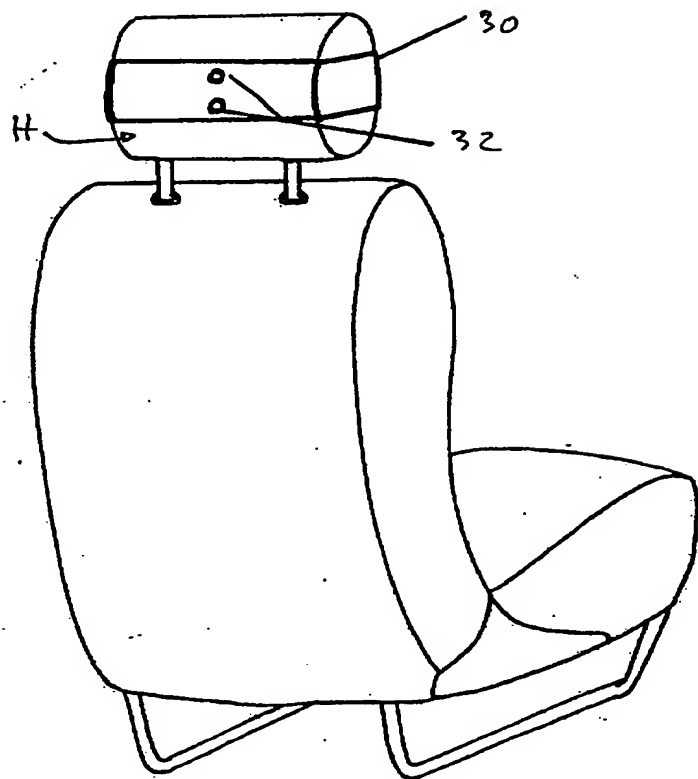


FIGURE 5

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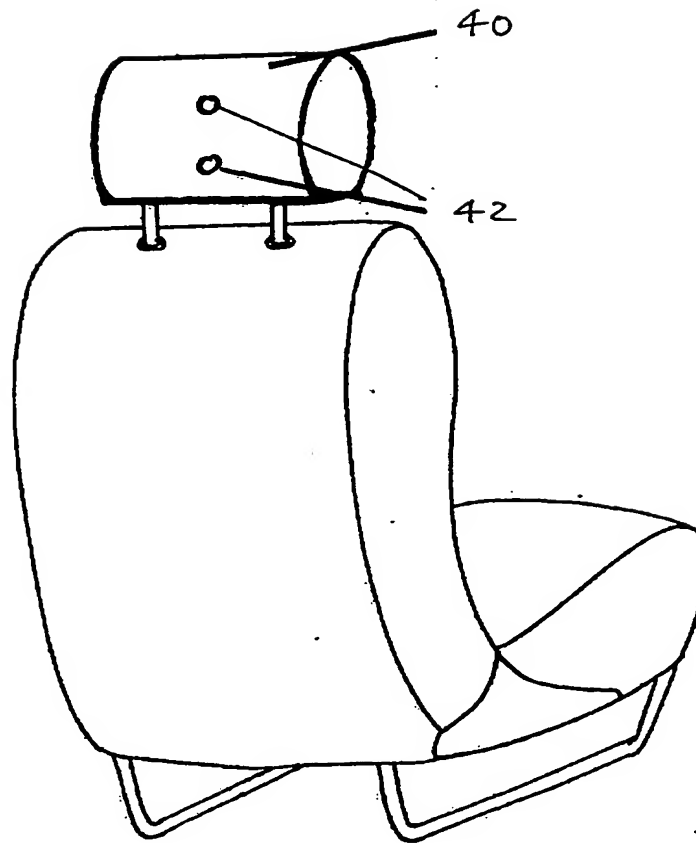


FIGURE 6

In-car Video Systems

The present invention relates to in-car video systems and in particular to arrangements for mounting a video screen in a car, for viewing by the rear-seat passengers.

An in-car video entertainment system has been developed
5 which comprises an LCD video screen embedded permanently in the rear of the front-seat headrest, for viewing by the rear-seat passengers.

I have now devised arrangements enabling video screens to be fitted in position without modification of existing vehicle
10 installations.

In accordance with the present invention, there is provided a mount for mounting a video screen in a vehicle, the mount being arranged for attaching to the headrest of a vehicle seat, such that at least a portion of the mount lies against
15 the rear surface of the headrest, said portion of the mount comprising means for engagement by the rear of the video screen to secure the video screen against the rear surface of the headrest.

The mount in accordance with the present invention enables
20 the video screen to be secured firmly in position against the rear surface of the headrest, so that rear-seat passengers can view the video output from a computer games device, video cassette/tape recorder or video disc player etc. The mount may be fitted to any existing headrest without any modification to
25 the headrest being required. Preferably the mount enables the video screen to be removed from the headrest, so that it can be stowed out of sight when the vehicle is left unattended. Moreover, the mount enables the in-car video system to be moved from car-to-car whenever desired.

30 In a preferred embodiment, the mount comprises a generally flat plate provided with the means for mounting engagement by the rear of the video screen, one or more straps being provided for tensioning around the headrest to attach the plate against the rear of the headrest.

In other embodiments, the mount may comprise a strap for passing around the headrest, either over the top and under the bottom of the headrest or around the opposite ends of the headrest, with the portion of the strap which lies against the rear surface of the headrest being provided with the means for mounting engagement by the rear of the video screen.

In a further embodiment, the mount may comprise a cover for fitting over the headrest, the cover being in the form of an envelope having an opening along e.g. its bottom edge, and including a rear portion or panel provided with the means for mounting engagement by the rear of the video screen.

In use, the video screen is mounted to the rear of the headrest and the video player is placed in any other desired location within the car or other vehicle. Preferably the video player and video screen are linked together by a single cable only, carrying both power and signals (audio and video) to the screen: typically, the power and signal ports are provided in one side edge of the screen and preferably the cable has a unitary terminal which attaches to the screen by engagement with these ports. Preferably an infra red sensor is mounted at a front surface of the connector and is coupled, via the cable, to the video player, enabling remote control of the player by a rear-seat passenger using a hand-held infra red controller.

Embodiments of the present invention will now be described by way of examples only and with reference to the accompanying drawings, in which:

FIGURE 1 is a view of a car seat with a first embodiment of screen mount attached to its headrest;

FIGURE 2 is an enlarged front view of the screen mount shown in Figure 1;

FIGURE 3 is a top-edge view of the screen mount;

FIGURE 4 is a view of a car seat with a second embodiment of screen mount attached to its headrest;

FIGURE 5 is a view of a car seat with a third embodiment of screen mount attached to its headrest; and

FIGURE 6 is a view of a car seat with a fourth embodiment of screen mount attached to its headrest.

Referring to Figure 1, there is shown a car seat S having a headrest H mounted to it by means of a pair of upright posts P, which project from the underside of the headrest, being received in respective sockets in the top edge of the back of the seat. A mount 10 is attached to the rear of the headrest H: the mount 10 is arranged for a flat, LCD video screen to be fitted to it to secure the screen against the rear surface of the headrest.

The mount 10 comprises a flat, rectangular plate formed, adjacent each of its ends, with a pair of elongate apertures 12 aligned parallel with its length. Two straps 14 are provided, and are threaded through the respective pairs of apertures 12 and passed around the top and bottom of the headrest: each strap is pulled tight around the headrest and its free ends are fastened together (e.g. by means of hook-and-loop (Velcro) fasteners) to secure the mount 10 firmly against the rear of the headrest. The front face of the mount 10 may be formed with a pair of vertically-spaced studs 15 (as shown in Figure 1) to facilitate the mounting of the video screen: instead, it may be formed with a projecting T-section rib 16 (as shown in Figures 2 and 3), running parallel to the opposite ends of the mount mid-way between them; the rib 16 enables a video screen, having a corresponding T-section groove in its rear, to be slidably mounted onto the mount 10.

The mount 10 is formed of plastics material and is strengthened by a peripheral lip 11 on its rear surface, as shown in Figures 2 and 3. From Figure 2, it will be appreciated that the mount is symmetrical about both vertical and horizontal medial lines, so can be attached either way up to the headrest.

In order to enable adjustment to the orientation of the screen, i.e. the direction in which it faces, a sheet 18 of foam plastics material is interposed between the mount 10 and

the rear surface of the headrest. The two straps 14 may be tightened by different amounts, so that the sheet of foam plastics material is compressed to different degrees adjacent its opposite ends, so that the screen is directed to left or right as required. Alternatively, the piece of foam plastics material may comprise a packing strip which is positioned as required towards one end or towards the top or bottom of the mount 10.

Referring to Figure 4, there is shown a second embodiment of screen mount attached to the headrest H of the car seat. In this embodiment, the screen mount comprises a strap 20 the ends of which are passed over the top and under the bottom of the headrest, and fastened together, e.g. by means of hook-and-loop (Velcro) fasteners. The strap 20 is provided with two projecting studs 22, spaced apart along its length and therefore vertically when the strap is tied around the headrest, onto which the video screen may be mounted: the strap is tensioned sufficiently to hold the screen firmly in position. The strap 20 may be displaced around the headrest to direct the screen as required in the vertical plane: in order to deflect the screen to left or right, a packing strip may be interposed between the back of the screen and the rear of the headrest, towards the right or left end of the headrest.

Referring to Figure 5, there is shown a third embodiment of screen mount attached to the headrest H of the car seat. In this embodiment, the screen mount comprises a strap 30 the ends of which are passed around the opposite ends of the headrest and fastened together, e.g. by means of hook-and-loop (Velcro) fasteners. The strap 30 is provided with two projecting studs 32, spaced across its width and therefore vertically when the strap is tied around the headrest, onto which the video screen may be mounted. The strap 30 is tensioned sufficiently to hold the screen firmly in position. The strap 30 may be displaced around the headrest to direct the screen as required in the vertical plane: in order to deflect

the screen to left or right, a packing strip may be used in the manner described for the embodiment of Figure 4.

Referring to Figure 6, there is shown a fourth embodiment of screen mount attached to the headrest H of the car seat.

5 In this embodiment, the mount comprises an elasticated cover 40 in the form of an envelope, open along its bottom edge, which is fitted over the top of the headrest. Because of its elasticated nature, the cover 40 grips the headrest firmly to maintain its position on the headrest. The cover 40 is

10 provided, in its rear side, with a pair of projecting studs 42, onto which the video screen may be mounted. The cover 40 may be displaced around the headrest to direct the screen as required in the vertical plane: a packing strip may be interposed between the screen and the headrest, as described

15 for the embodiments of Figures 4 and 5, to deflect the screen to left or right.

It will be appreciated that, in each of the embodiments which have been described, the video screen may be attached to the mount either after the mount is secured to the headrest,

20 or beforehand. Similarly, the video screen may be removed from the mount either before the mount is removed from the headrest, or afterwards.

Upon leaving the car unattended, the video screen will normally be detached and stored in a safe place: the mount may

25 be left in position on the headrest, or it may be removed.

Claims

- 1) A mount for mounting a video screen in a vehicle, the mount being arranged for attaching to the headrest of a vehicle seat, such that at least a portion of the mount lies against
5 the rear surface of the headrest, said portion of the mount comprising means for engagement by the rear of the video screen to secure the video screen against the rear surface of the headrest.
- 2) A mount as claimed in claim 1, comprising a generally flat
10 plate provided with said means for engagement by the rear of the video screen, and means for attaching said plate to the headrest.
- 3) A mount as claimed in claim 2, in which one or more straps are provided for tensioning around the headrest to attach said
15 plate against the headrest.
- 4) A mount as claimed in claim 3, in which said plate is formed with apertures through which the or each said strap is threaded.
- 5) A mount as claimed in any of claims 2 to 4, in which the
20 plate comprises a front surface for engagement by the rear of the video screen and a rear surface arranged to face the headrest, wherein a resiliently deformable member is provided on the rear surface of the plate.
- 6) A mount as claimed in claim 3, in the which resiliently
25 deformable member comprises a sheet of foamed plastics material.
- 7) A mount as claimed in claim 1, comprising a strap for passing over the top and under the bottom of the headrest, a

portion of said strap lying, in use of the mount, against the rear surface of the headrest and being provided with said means for engagement by the video screen.

8) A mount as claimed in claim 1, comprising a strap for
5 passing around the opposite ends of the headrest, a portion of said strap lying, in use of the mount, against the rear surface of the headrest and being provided with said means for engagement by the video screen.

9) A mount as claimed in claim 1, comprising a cover for
10 fitting over the headrest, a portion of said cover lying, in use of the mount, against the rear surface of the headrest and being provided with said means for engagement by the video screen.

10) A mount substantially as herein described with reference
15 to Figures 1 to 3, Figure 4, Figure 5 or Figure 6 of the accompanying drawings.



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Claims searched: 1-10

Examiner: Robert Black
Date of search: 2 April 2001

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

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Int Cl (Ed.7): A47C 7/72, 7/62, 7/38; B60N 3/00, 2/48; B60R 11/00, 11/02; B64D 11/00

Other: Online: EPODOC, WPI, PAJ

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2239639 A (LIN) see figures	1 and 2
X	EP 0230280 A1 (AVIATION) see figures 2-5 and page 7 line 29 to page 8 line 32	1, 2, 5 and 6
X P	WO 00/07847 A1 (MERITT) see figures 3-13	1-5 and 8
X	US 5842715 A (JONES) see figures 1-5 and 8	1-5 and 7
X	US 5713633 A (LU) see figures 1 and 9-11	1 and 2

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.